

# Application

Nwaonicha 10/761,641

06/14/2005

L3 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2004:681442 HCAPLUS  
 DOCUMENT NUMBER: 141:192260  
 ENTRY DATE: Entered STN: 20 Aug 2004  
 TITLE: Oxidation process for producing hydroperoxides using  
 neutralizing base  
 INVENTOR(S): Yang, Jiemin; Black, Jesse Raymond  
 PATENT ASSIGNEE(S): USA  
 SOURCE: U.S. Pat. Appl. Publ., 8 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 INT. PATENT CLASSIF.:  
 MAIN: C07C409-00  
 US PATENT CLASSIF.: 568577000  
 CLASSIFICATION: 45-4 (Industrial Organic Chemicals, Leather, Fats, and  
 Waxes)  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004162448	A1	20040819	US 2004-761641	20040121 <--
US 2004236152	A1	20041125	US 2004-761676	20040121
WO 2004074230	A1	20040902	WO 2004-US4009	20040211
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RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
WO 2004074241	A1	20040902	WO 2004-US4010	20040211 <--
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PRIORITY APPLN. INFO.: US 2003-447526P P 20030214  
 US 2004-761641 A 20040121 <--

## PATENT CLASSIFICATION CODES:

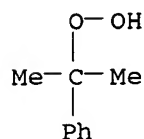
PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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	INCL	568577000

US 2004162448 NCL 568/577.000  
ECLA C07C409/08; C07C409/10 <--  
US 2004236152 NCL 568/414.000; 568/798.000  
WO 2004074230 ECLA C07C409/08; C07C409/10  
WO 2004074241 ECLA C07C409/08; C07C409/10 <--  
OTHER SOURCE(S): CASREACT 141:192260

## ABSTRACT:

A process for oxidation of alkylbenzenes to produce hydroperoxides comprises: providing an oxidation feed consisting essentially of an organic phase, the oxidation feed comprising one or more alkylbenzenes and a quantity of neutralizing base having a pH of from about 8 to about 12.5 in 1 to 10% aqueous solution, the quantity of neutralizing base being effective to neutralize at least a portion of acids formed during the oxidation, the oxidation feed comprising up to an amount of water effective to increase neutralization of acids formed during the oxidation without forming a sep. aqueous phase; exposing the oxidation feed to oxidation conditions effective to produce an oxidation product stream comprising one or more product hydroperoxides.

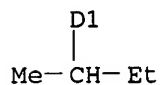
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INDEX TERM: Oxidation  
(oxidation process for producing hydroperoxides using neutralizing base)  
INDEX TERM: Hydroperoxides  
ROLE: IMF (Industrial manufacture); PREP (Preparation)  
(oxidation process for producing hydroperoxides using neutralizing base)  
INDEX TERM: Bases, reactions  
ROLE: RCT (Reactant); RACT (Reactant or reagent)  
(oxidation process for producing hydroperoxides using neutralizing base)  
INDEX TERM: 80-15-9P, Cumene hydroperoxide 52208-72-7P  
, sec-Butylbenzene hydroperoxide  
ROLE: IMF (Industrial manufacture); PREP (Preparation)  
(oxidation process for producing hydroperoxides using neutralizing base)  
INDEX TERM: 98-82-8, Cumene 135-98-8 7664-41-7  
, Ammonia, reactions  
ROLE: RCT (Reactant); RACT (Reactant or reagent)  
(oxidation process for producing hydroperoxides using neutralizing base)  
IT 80-15-9P, Cumene hydroperoxide 52208-72-7P,  
sec-Butylbenzene hydroperoxide  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(oxidation process for producing hydroperoxides using neutralizing base)  
RN 80-15-9 HCAPLUS  
CN Hydroperoxide, 1-methyl-1-phenylethyl (9CI) (CA INDEX NAME)



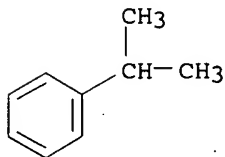
RN 52208-72-7 HCAPLUS  
CN Hydroperoxide, (1-methylpropyl)phenyl (9CI) (CA INDEX NAME)



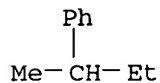
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IT 98-82-8, Cumene 135-98-8 7664-41-7, Ammonia,  
reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(oxidation process for producing hydroperoxides using neutralizing base)  
RN 98-82-8 HCAPLUS  
CN Benzene, (1-methylethyl)- (9CI) (CA INDEX NAME)



RN 135-98-8 HCAPLUS  
CN Benzene, (1-methylpropyl)- (9CI) (CA INDEX NAME)



RN 7664-41-7 HCAPLUS  
CN Ammonia (8CI, 9CI) (CA INDEX NAME)

NH<sub>3</sub>

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FILE 'REGISTRY' ENTERED AT 16:59:38 ON 14 JUN 2005

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\* available and contains the CA role and document type information. \*  
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FILE LAST UPDATED: 13 Jun 2005 (20050613/ED)

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=> d que 117

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NRS=1 AND C/ELS AND H/ELS AND 2/ELC.SUB AND NC=1 NOT (PMS OR  
IDS OR MAN)/CI  
L5 95302 SEA FILE=HCAPLUS ABB=ON PLU=ON L4(L) (RCT OR RACT)/RL  
L6 STR

O~OH

1 2

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 2

STEREO ATTRIBUTES: NONE

L8 14032 SEA FILE=REGISTRY SSS FUL L6  
L9 9803 SEA FILE=HCAPLUS ABB=ON PLU=ON L8(L) (PREP OR IMF)/RL  
L10 1426 SEA FILE=HCAPLUS ABB=ON PLU=ON HYDROPEROXIDES+PFT,NT/CT(L) (PR  
EP OR IMF)/RL  
L11 9914 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 OR L10  
L12 1213 SEA FILE=HCAPLUS ABB=ON PLU=ON L11 AND L5  
L13 2486 SEA FILE=HCAPLUS ABB=ON PLU=ON BASES+PFT,NT/CT(L) (RCT OR  
RACT)/RL  
L14 1 SEA FILE=REGISTRY ABB=ON PLU=ON AMMONIA/CN  
L15 27879 SEA FILE=HCAPLUS ABB=ON PLU=ON L14(L) (RCT OR RACT)/RL  
L16 30271 SEA FILE=HCAPLUS ABB=ON PLU=ON L13 OR L15  
L17 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L16 AND L12

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L17 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:902386 HCAPLUS

DOCUMENT NUMBER: 141:395583

TITLE: Preparation of triazolopyrazines as A2a adenosine  
receptor antagonists for the treatment of Parkinson's  
disease

INVENTOR(S): Dowling, James; Yao, Gang; Chang, Hexi; Peng, Hairuo;  
Vessels, Jeffrey; Petter, Russell C.; Kumaravel,  
Gnanasambandam

PATENT ASSIGNEE(S): Biogen Idec Ma Inc., USA

SOURCE: PCT Int. Appl., 100 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2004092177	A1	20041028	WO 2004-US11006	20040409

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PRIORITY APPLN. INFO.:

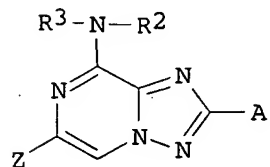
US 2003-461546P

P 20030409

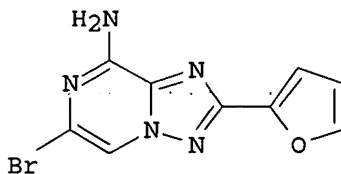
OTHER SOURCE(S):

MARPAT 141:395583

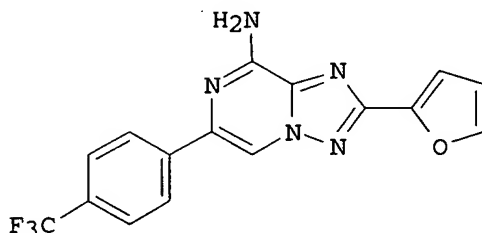
GI



I



II



III

AB Title compds. I [A = aryl, heteroaryl; R2, R3 = H, alkyl, cycloalkyl, etc.; Z = -X1-L-X2-Y-X3-R1; X1, X2, X3 = bond, alkylene, alkenylene, etc.; L = bond or cyclic-linker] and their pharmaceutically acceptable salts and N-oxides were prepared. For example, coupling of 4-trifluoromethylphenylboronic acid and bromophenyl II, e.g., prepared from furan-2-carbonitrile in 3-steps, afforded claimed triazolopyrazine III. In A2a adenosine receptor binding assays, compds. I exhibited Ki values less than 10  $\mu$ M. Compds. I are claimed useful for the treatment of Parkinson's disease.

IC ICM C07D487-04

ICS C07D241-20; A61K031-4985

CC 28-19 (Heterocyclic Compounds (More Than One Hetero Atom))

Section cross-reference(s): 1

IT 51-67-2 55-22-1, Isonicotinic acid, reactions 67-56-1, Methanol, reactions 74-88-4, Iodomethane, reactions 74-89-5, Methylamine, reactions 75-65-0, reactions 77-75-8 78-27-3 86-58-8 92-91-1 93-08-3 98-01-1, 2-Furaldehyde, reactions 99-07-0 103-67-3, Benzylmethylamine 104-53-0, Benzenepropanal 106-96-7, Propargyl bromide 107-19-7, 2-Propyn-1-ol 107-54-0 108-24-7 108-95-2,

Phenol, reactions 109-00-2, 3-Pyridinol 109-89-7, Diethylamine, reactions 110-89-4, Piperidine, reactions 111-13-7, 2-Octanone 122-51-0, Triethyl orthoformate 127-66-2 456-48-4, 3-Fluorobenzaldehyde 538-51-2, Benzylidenephénylamine 555-57-7 615-13-4 617-90-3, 2-Furancarbonitrile 621-87-4 630-08-0, Carbon monoxide, reactions 705-31-7 946-33-8 993-53-3 1003-31-2, 2-Thiophenecarbonitrile 1008-91-9 1066-54-2, (Trimethylsilyl)acetylene 1128-05-8 1423-26-3 1550-35-2 1692-25-7 1737-19-5  
**1823-14-9** 1945-84-2 2038-57-5, Benzenepropanamine 2510-36-3 2550-26-7 2613-23-2 2759-28-6 3405-77-4 3541-37-5, Benzo[b]thiophene-2-carboxaldehyde 3923-52-2 4187-87-5 4301-14-8, Ethynylmagnesium bromide 4334-87-6 4334-88-7 4363-93-3, 4-Quinolinecarboxaldehyde 5006-62-2 5036-48-6, 1H-Imidazole-1-propanamine 5332-96-7 5333-87-9 5744-56-9 5980-97-2 6089-04-9 6097-08-1 6285-06-9 6304-16-1 6975-60-6 **7664-41-7**, Ammonia, reactions 7726-95-6, Bromine, reactions 7797-83-3, 1,3-Benzodioxole-4-carboxaldehyde 10041-02-8 10365-98-7 13331-23-2 13331-27-6 13922-41-3 14047-29-1 14918-21-9, 5-Hexynenitrile 16114-47-9 16298-03-6 17356-19-3 **17715-00-3** 17933-03-8 18107-18-1, Trimethylsilyldiazomethane 19549-98-5 21508-19-0 24067-17-2, 4-Nitrophenylboronic acid 24241-18-7, 3,5-Dibromopyrazin-2-ylamine 28356-58-3, 4-Pyridineacetic acid 28611-39-4 30389-18-5 30418-59-8 34803-66-2 35161-71-8 36016-39-4 40908-74-5 41613-59-6 51067-38-0 51175-71-4, 3-Thiophenesulfonyl chloride 53137-27-2 54593-26-9 55552-70-0 57260-71-6 58551-83-0, 2,4,6-Trifluorobenzaldehyde 59016-93-2 62254-74-4 71597-85-8, 4-Hydroxyphenylboronic acid 73852-19-4 78461-60-6 78887-39-5 79099-07-3 **79887-10-8** 87199-15-3 87199-16-4 87199-17-5 87199-18-6, 3-Hydroxyphenylboronic acid 88462-65-1 89415-43-0 89641-18-9 92136-39-5 94839-07-3 98135-75-2 98437-24-2 98546-51-1 98977-36-7, 3-Oxopiperidine-1-carboxylic acid tert-butyl ester 99727-20-5 99768-12-4 100124-06-9 100124-07-0 109299-78-7 115761-79-0 116279-08-4 126747-14-6 128455-62-9, 5-Chloro-1-methyl-3-(trifluoromethyl)pyrazole-4-carboxaldehyde 128796-39-4, 4-Trifluoromethylphenylboronic acid 139301-27-2 146285-80-5 147621-18-9 148355-75-3 149104-88-1 150255-96-2 151169-75-4 153893-99-3 156682-54-1 163105-89-3 170141-63-6 178305-99-2 178752-79-9 179113-90-7 182344-21-4, 4-Hydroxy-3-methoxy-phenylboronic acid 204841-19-0 207853-63-2 207986-23-0 216019-28-2 216959-92-1 286474-59-7 286961-14-6, 4-(4,4,5,5-Tetramethyl-[1,3,2]dioxaborolan-2-yl)-3,6-dihydro-2H-pyridine-1-carboxylic acid tert-butyl ester 287917-96-8 302912-34-1 373384-18-0 669004-10-8 759443-28-2 785051-40-3 785051-41-4 785051-43-6

RL: **RCT (Reactant); RACT (Reactant or reagent)**

(preparation of triazolopyrazines as A2a adenosine receptor antagonists for the treatment of Parkinson's disease)

IT **937-14-4P**, m-CPBA 6966-01-4P 10034-85-2P, Hydriodic acid 146940-37-6P 146940-38-7P 199538-99-3P, 4-Prop-2-ynylpiperazine-1-carboxylic acid tert-butyl ester 287192-85-2P 785051-21-0P 785051-22-1P 785051-23-2P 785051-24-3P 785051-25-4P 785051-26-5P 785051-27-6P 785051-28-7P 785051-30-1P 785051-31-2P 785051-32-3P 785051-33-4P 785051-34-5P 785051-35-6P 785051-36-7P 785051-37-8P 785051-38-9P 785051-39-0P 824937-95-3P

RL: **RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)**

(preparation of triazolopyrazines as A2a adenosine receptor antagonists for the treatment of Parkinson's disease)

IT **1823-14-9 7664-41-7**, Ammonia, reactions

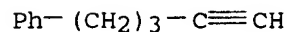
17715-00-3 79887-10-8

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of triazolopyrazines as A2a adenosine receptor antagonists for the treatment of Parkinson's disease)

RN 1823-14-9 HCAPLUS

CN Benzene, 4-pentynyl- (9CI) (CA INDEX NAME)



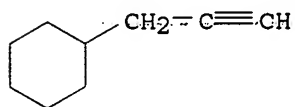
RN 7664-41-7 HCAPLUS

CN Ammonia (8CI, 9CI) (CA INDEX NAME)



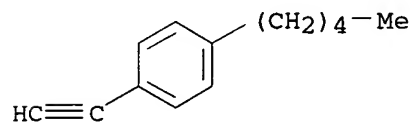
RN 17715-00-3 HCAPLUS

CN Cyclohexane, 2-propynyl- (9CI) (CA INDEX NAME)



RN 79887-10-8 HCAPLUS

CN Benzene, 1-ethynyl-4-pentyl- (9CI) (CA INDEX NAME)



IT 937-14-4P, m-CPBA

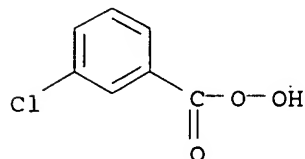
RL: RCT (Reactant); SPN (Synthetic preparation); PREP

(Preparation); RACT (Reactant or reagent)

(preparation of triazolopyrazines as A2a adenosine receptor antagonists for the treatment of Parkinson's disease)

RN 937-14-4 HCAPLUS

CN Benzenecarboxylic acid, 3-chloro- (9CI) (CA INDEX NAME)



REFERENCE COUNT:

6

THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:681442 HCAPLUS

DOCUMENT NUMBER: 141:192260

TITLE: Oxidation process for producing hydroperoxides using neutralizing base

INVENTOR(S): Yang, Jiemin; Black, Jesse Raymond

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 8 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004162448	A1	20040819	US 2004-761641	20040121
US 2004236152	A1	20041125	US 2004-761676	20040121
WO 2004074230	A1	20040902	WO 2004-US4009	20040211
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WO 2004074241	A1	20040902	WO 2004-US4010	20040211
W:	AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KR, KR, KZ, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ, MZ, NA, NI			
RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

PRIORITY APPLN. INFO.:  
US 2003-447526P P 20030214  
US 2004-761641 A 20040121

OTHER SOURCE(S): CASREACT 141:192260

AB A process for oxidation of alkylbenzenes to produce hydroperoxides comprises: providing an oxidation feed consisting essentially of an organic phase, the oxidation feed comprising one or more alkylbenzenes and a quantity of neutralizing base having a pH of from about 8 to about 12.5 in 1 to 10% aqueous solution, the quantity of neutralizing base being effective to neutralize

at least a portion of acids formed during the oxidation, the oxidation feed comprising up to an amount of water effective to increase neutralization of acids formed during the oxidation without forming a sep. aqueous phase; exposing the oxidation feed to oxidation conditions effective to produce an oxidation

product stream comprising one or more product hydroperoxides.

IC ICM C07C409-00

INCL 568577000

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)

IT **Hydroperoxides**

RL: ~~IMF~~ (Industrial manufacture); PREP (Preparation)

(oxidation process for producing hydroperoxides using neutralizing base)

IT **Bases, reactions**

RL: RCT (Reactant); RACT (Reactant or reagent)

(oxidation process for producing hydroperoxides using neutralizing base)

IT 80-15-9P, Cumene hydroperoxide 52208-72-7P,

sec-Butylbenzene hydroperoxide

RL: IMF (Industrial manufacture); PREP (Preparation)

(oxidation process for producing hydroperoxides using neutralizing base)

IT 98-82-8, Cumene 135-98-8 7664-41-7, Ammonia, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(oxidation process for producing hydroperoxides using neutralizing base)

IT 80-15-9P, Cumene hydroperoxide 52208-72-7P,

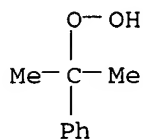
sec-Butylbenzene hydroperoxide

RL: IMF (Industrial manufacture); PREP (Preparation)

(oxidation process for producing hydroperoxides using neutralizing base)

RN 80-15-9 HCAPLUS

CN Hydroperoxide, 1-methyl-1-phenylethyl (9CI) (CA INDEX NAME)

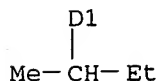


RN 52208-72-7 HCAPLUS

CN Hydroperoxide, (1-methylpropyl)phenyl (9CI) (CA INDEX NAME)



D1-O-OH



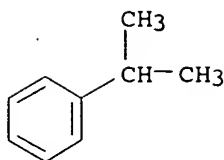
IT 98-82-8, Cumene 135-98-8 7664-41-7, Ammonia, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

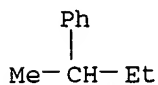
(oxidation process for producing hydroperoxides using neutralizing base)

RN 98-82-8 HCAPLUS

CN Benzene, (1-methylethyl)- (9CI) (CA INDEX NAME)



RN 135-98-8 HCAPLUS  
 CN Benzene, (1-methylpropyl)- (9CI) (CA INDEX NAME)



RN 7664-41-7 HCAPLUS  
 CN Ammonia (8CI, 9CI) (CA INDEX NAME)

NH<sub>3</sub>

L17 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2005 ACS on STN  
 X  
 ACCESSION NUMBER: 2004:625159 HCAPLUS  
 DOCUMENT NUMBER: 141:158948  
 TITLE: Integrated process for selective oxidation of organic compounds  
 INVENTOR(S): De Frutos, Pilar; Padilla, Ana; Riesco, Jose Manuel; Campos Martin, Jose Miguel; Brieva Gema, Blanco; Serrano Encarnacion, Cano; Capel Sanchez, Maria del Carmen; Garcia Fierro, Jose Luis  
 PATENT ASSIGNEE(S): Repsol Quimica S.A., Spain  
 SOURCE: Eur. Pat. Appl., 13 pp: CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1443020	A1	20040804	EP 2003-380019	20030203
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
US 2004151658	A1	20040805	US 2003-453172	20030603
US 6822103	B2	20041123		
JP 2004238388	A2	20040826	JP 2003-282420	20030730
PRIORITY APPLN. INFO.:			EP 2003-380019	A 20030203

AB Oxidized compds. are produced in a continuous integrated process in liquid phase, which comprises the synthesis of non acidic hydrogen peroxide solns. by direct reaction between hydrogen and oxygen by catalytic reaction utilizing a noble metal catalyst, followed by direct mixing of this hydrogen peroxide solution with an organic substrate, a suitable catalyst and optionally a solvent. The integrated process requires no treatment

step and is particularly well adapted to the production of propylene oxide.

IC ICM C01B015-029  
ICS C07B033-00; B01J031-10; B01J023-44; B01J023-42; C07D301-12;  
C07D303-14

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)  
Section cross-reference(s): 49

IT 7722-84-1P, Hydrogen peroxide, preparation  
RL: ~~IMF (Industrial manufacture)~~; RCT (Reactant); ~~PREP~~  
(Preparation); RACT (Reactant or reagent)  
(integrated process for selective oxidation of organic compds.)

IT 71-43-2, Benzene, reactions 75-65-0, 2-Methyl-2-propanol,  
reactions 107-05-1, Allyl chloride 107-18-6, Allyl alcohol, reactions  
108-94-1, Cyclohexanone, reactions 108-95-2, Phenol, reactions  
110-83-8, Cyclohexene, reactions 111-66-0, 1-Octene 115-07-1,  
Propylene, reactions 1333-74-0, Hydrogen, reactions 3375-31-3,  
Palladium(II) acetate 7664-41-7, Ammonia, reactions 7782-44-7,  
Oxygen, reactions 10035-10-6, Hydrogen bromide, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(integrated process for selective oxidation of organic compds.)

IT 7722-84-1P, Hydrogen peroxide, preparation  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP  
(Preparation); RACT (Reactant or reagent)  
(integrated process for selective oxidation of organic compds.)

RN 7722-84-1 HCAPLUS  
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)

HO-OH

IT 71-43-2, Benzene, reactions 110-83-8, Cyclohexene,  
reactions 7664-41-7, Ammonia, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(integrated process for selective oxidation of organic compds.)

RN 71-43-2 HCAPLUS  
CN Benzene (8CI, 9CI) (CA INDEX NAME)



RN 110-83-8 HCAPLUS  
CN Cyclohexene (8CI, 9CI) (CA INDEX NAME)



RN 7664-41-7 HCAPLUS  
CN Ammonia (8CI, 9CI) (CA INDEX NAME)

NH3

L17 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:453932 HCAPLUS

DOCUMENT NUMBER: 140:412882

TITLE: Nanoporous metal-containing nickel phosphates: A class of shape-selective catalyst

AUTHOR(S): Chang, Jong-San; Hwang, Jin-Soo; Jung, Sung Hwa; Park, Sang-Eon; Ferey, Gerard; Cheetham, Anthony K.

CORPORATE SOURCE: Catalysis Center for Molecular Engineering, Korea Research Institute of Chemical Technology, Yuseong, Taejeon, 305-600, S. Korea

SOURCE: Angewandte Chemie, International Edition (2004), 43(21), 2819-2822

CODEN: ACIEF5; ISSN: 1433-7851

PUBLISHER: Wiley-VCH Verlag GmbH &amp; Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A substitute for zeolites: The nanoporous nickel phosphate VSB-1 exhibits zeolitic properties and very weak acidity and basicity. When VSB-1 is modified by metal-ion exchange or through metal incorporation into the framework, it offers promising catalytic properties, such as shape selectivity, and activity in both redox catalysis and photocatalysis.

CC 67-1 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms) Section cross-reference(s): 23, 24, 25, 74, 78

IT 110-83-8, Cyclohexene, reactions 111-66-0, 1-Octene 1501-82-2, Cyclododecene

RL: **RCT (Reactant); RACT (Reactant or reagent)**  
(hydrogenation of; nanoporous metal-containing nickel phosphates as class of shape-selective catalyst)

IT 7722-84-1P, Hydrogen peroxide, preparation

RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(nanoporous metal-containing nickel phosphates as class of shape-selective catalyst)

IT 7664-41-7, Ammonia, reactions

RL: **RCT (Reactant); RACT (Reactant or reagent)**  
(photo-Fenton oxidation of; nanoporous metal-containing nickel phosphates as class of shape-selective catalyst)

IT 110-83-8, Cyclohexene, reactions

RL: **RCT (Reactant); RACT (Reactant or reagent)**  
(hydrogenation of; nanoporous metal-containing nickel phosphates as class of shape-selective catalyst)

RN 110-83-8 HCAPLUS

CN Cyclohexene (8CI, 9CI) (CA INDEX NAME)



IT 7722-84-1P, Hydrogen peroxide, preparation

RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(nanoporous metal-containing nickel phosphates as class of shape-selective catalyst)

RN 7722-84-1 HCAPLUS

CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)

HO-OH

IT 7664-41-7, Ammonia, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(photo-Fenton oxidation of; nanoporous metal-containing nickel phosphates as  
class of shape-selective catalyst)  
RN 7664-41-7 HCAPLUS  
CN Ammonia (8CI, 9CI) (CA INDEX NAME)

NH<sub>3</sub>

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:790254 HCAPLUS

DOCUMENT NUMBER: 137:296556

TITLE: Method and system for manufacturing cumene  
hydroperoxide by the peroxidation of cumeneINVENTOR(S): Fulmer, John William; Scott, Eugene Edward; Kight,  
William Dale

PATENT ASSIGNEE(S): General Electric Company, USA

SOURCE: U.S., 8 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6465695	B1	20021015	US 2001-916775	20010727
WO 2003011820	A1	20030213	WO 2002-US22083	20020609
WO 2003011820	C1	20031211		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
EP 1414793	A1	20040506	EP 2002-752279	20020709
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK			
US 2003092943	A1	20030515	US 2002-225095	20020821
US 6620974	B2	20030916		

PRIORITY APPLN. INFO.: US 2001-916775 A 20010727  
WO 2002-US22083 W 20020609

AB Cumene hydroperoxide is manufactured in high yield and selectivity by reacting cumene and oxygen in the presence of a water phase containing aqueous ammonia, and in the absence of an additive containing an alkali or alkaline earth metal, to

form cumene hydroperoxide. A system for producing cumene hydroperoxide is described which comprises a cumene feed in fluid communication with a reactor having a cumene hydroperoxide oxidate outlet, an oxygen feed in fluid communication with the reactor, and an ammonia feed in fluid communication with the cumene feed and/or the reactor, where the cumene feed, the oxygen feed, the ammonia feed, and the reactor are free of an additive comprising an alkali or alkaline earth metal. Process flow diagrams are presented.

IC ICM C07C409-02

INCL 568571000

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)

Section cross-reference(s): 25, 47, 48

IT 80-15-9P, Cumene hydroperoxide

RL: EPR (Engineering process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)

(method and system for manufacturing cumene hydroperoxide by the peroxidn.

of

cumene)

IT 98-82-8, Cumene

RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(method and system for manufacturing cumene hydroperoxide by the peroxidn.

of

cumene)

IT 463-79-6D, Carbonic acid, Group IA or IIA carbonates, reactions

497-19-8, Sodium carbonate, reactions 1336-21-6, Ammonium hydroxide

7664-38-2D, Phosphoric acid, Group IA or IIA phosphates, reactions

7664-41-7, Ammonia, reactions

RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); RGT (Reagent); PROC (Process); RACT (Reactant or reagent)

(neutralizing agents; in manufacturing cumene hydroperoxide by the peroxidn. of cumene)

IT 80-15-9P, Cumene hydroperoxide

RL: EPR (Engineering process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)

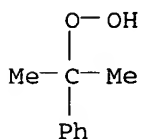
(method and system for manufacturing cumene hydroperoxide by the peroxidn.

of

cumene)

RN 80-15-9. HCAPLUS

CN Hydroperoxide, 1-methyl-1-phenylethyl (9CI) (CA INDEX NAME)



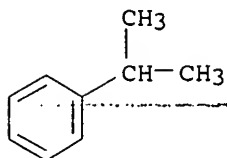
IT 98-82-8, Cumene

RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(method and system for manufacturing cumene hydroperoxide by the peroxidn.

of

cumene)  
 RN 98-82-8 HCAPLUS  
 CN Benzene, (1-methylethyl)- (9CI) (CA INDEX NAME)



IT 7664-41-7, Ammonia, reactions  
 RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); RGT (Reagent); PROC (Process); **RACT (Reactant or reagent)**  
 (neutralizing agents; in manufacturing cumene hydroperoxide by the peroxidn. of cumene)  
 RN 7664-41-7 HCAPLUS  
 CN Ammonia (8CI, 9CI) (CA INDEX NAME)

NH<sub>3</sub>

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2001:747725 HCAPLUS  
 DOCUMENT NUMBER: 135:290433  
 TITLE: Method for oxidizing hydrocarbons and organic compounds  
 INVENTOR(S): Kuehnle, Adolf; Duda, Mark; Sheldon, Roger Arthur; Sasidharan, Manickam; Arends, Isabella W. C. E.; Schiffer, Thomas; Fries, Guido; Kirchhoff, Jochen  
 PATENT ASSIGNEE(S): Creavis Gesellschaft Fuer Technologie Und Innovation Mbh, Germany  
 SOURCE: PCT Int. Appl., 26 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001074742	A2	20011011	WO 2001-EP3289	20010322
WO 2001074742	A3	20020214		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,				

BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  
 DE 10015880 A1 20011011 DE 2000-10015880 20000330  
 EP 1268367 A2 20030102 EP 2001-936129 20010322  
 EP 1268367 B1 20040721  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
 JP 2004504273 T2 20040212 JP 2001-572439 20010322  
 ES 2223853 T3 20050301 ES 2001-1936129 20010322  
 US 2003176733 A1 20030918 US 2003-239215 20030115  
 US 6852893 B2 20050208

PRIORITY APPLN. INFO.: DE 2000-10015880 A 20000330  
 WO 2001-EP3289 W 20010322

OTHER SOURCE(S): MARPAT 135:290433

AB A method for oxidizing substrates such as hydrocarbons (e.g., cyclododecane into cyclododecanone), waxes, or soot comprises the use of a hydroxyimide (e.g., N-hydroxyphthalimide) catalyst in the presence of a radical initiator such as peroxy compds. (e.g., cumyl hydroperoxide) or azo compds.

IC ICM C07B041-00

ICS C07C029-50; C07C045-33; C07C407-00

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)  
 Section cross-reference(s): 21, 24, 67

IT Alcohols, preparation

Carboxylic acids, preparation

**Hydroperoxides**

Ketones, preparation

RL: IMF (Industrial manufacture); RCT (Reactant); PREP

(Preparation); RACT (Reactant or reagent)

(method for oxidizing hydrocarbons and organic compds.)

IT 502-49-8P, Cyclooctanone 502-72-7P, Cyclopentadecanone 830-13-7P,  
 Cyclododecanone 3071-32-7P, Ethylbenzene hydroperoxide  
 20614-61-3P, Cyclohexylbenzene hydroperoxide

RL: IMF (Industrial manufacture); PREP (Preparation)

(method for oxidizing hydrocarbons and organic compds.)

IT 74-98-6, Propane, reactions 75-28-5, Isobutane 78-59-1, Isophorone

80-15-9, Cumyl hydroperoxide 95-47-6, o-Xylene, reactions

98-82-8, Cumene 100-41-4, Ethylbenzene, reactions

104-51-8, Butylbenzene 106-42-3, p-Xylene, reactions

106-99-0, Butadiene, reactions 108-38-3, reactions

~~108-88-3, Toluene, reactions~~ 108-93-0, Cyclohexanol, reactions

108-94-1, Cyclohexanone, reactions 110-82-7, Cyclohexane,

reactions 110-83-8, Cyclohexene, reactions 115-07-1, Propene,

reactions 115-11-7, Isobutene, reactions 119-64-2, Tetralin

292-64-8, Cyclooctane 294-62-2, Cyclododecane 295-48-7,

Cyclopentadecane 628-92-2, Cycloheptene 696-71-9, Cyclooctanol

827-52-1, Cyclohexylbenzene 931-88-4, Cyclooctene 1321-60-4,

Trimethylcyclohexanol 1333-41-1, Picoline 1501-82-2, Cyclododecene

1724-39-6, Cyclododecanol 2567-87-5, Aminocyclododecane 3618-11-9,

Cyclononene 4727-17-7, Cyclopentadecanol 7664-41-7, Ammonia,

reactions 9002-88-4 15971-88-7, Cyclododecylbenzene 25167-67-3,

Butene 27070-59-3, Cyclododecatriene 27213-36-1, Cyclododecadiene

29965-97-7, Cyclooctadiene 30172-87-3, Trivinylcyclohexane 30498-63-6,

Trimethylcyclohexane 50874-76-5, Trimethylcyclohexanone 96398-65-1,

Cyclopentadecatriene

RL: RCT (Reactant); RACT (Reactant or reagent)

(method for oxidizing hydrocarbons and organic compds.)

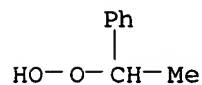
IT 3071-32-7P, Ethylbenzene hydroperoxide 20614-61-3P,

Cyclohexylbenzene hydroperoxide

RL: IMF (Industrial manufacture); PREP (Preparation)  
(method for oxidizing hydrocarbons and organic compds.)

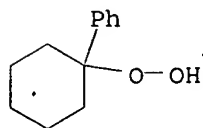
RN 3071-32-7 HCAPLUS

CN Hydroperoxide, 1-phenylethyl (9CI) (CA INDEX NAME)



RN 20614-61-3 HCAPLUS

CN Hydroperoxide, 1-phenylcyclohexyl (6CI, 8CI, 9CI) (CA INDEX NAME)



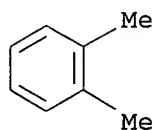
IT 95-47-6, o-Xylene, reactions 98-82-8, Cumene  
100-41-4, Ethylbenzene, reactions 104-51-8, Butylbenzene  
106-42-3, p-Xylene, reactions 108-38-3, reactions  
108-88-3, Toluene, reactions 110-82-7, Cyclohexane,  
reactions 110-83-8, Cyclohexene, reactions 7664-41-7,  
Ammonia, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(method for oxidizing hydrocarbons and organic compds.).

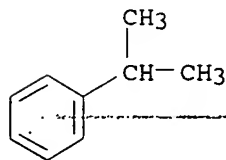
RN 95-47-6 HCAPLUS

CN Benzene, 1,2-dimethyl- (9CI) (CA INDEX NAME)



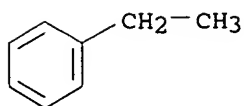
RN 98-82-8 HCAPLUS

CN Benzene, (1-methylethyl)- (9CI) (CA INDEX NAME)

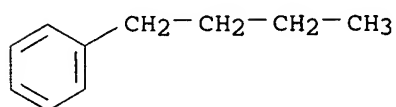


RN 100-41-4 HCAPLUS

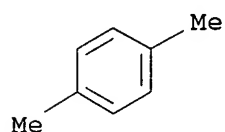
CN Benzene, ethyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



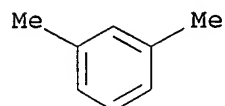
RN 104-51-8 HCAPLUS  
CN Benzene, butyl- (8CI, 9CI) (CA INDEX NAME)



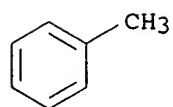
RN 106-42-3 HCAPLUS  
CN Benzene, 1,4-dimethyl- (9CI) (CA INDEX NAME)



RN 108-38-3 HCAPLUS  
CN Benzene, 1,3-dimethyl- (9CI) (CA INDEX NAME)



RN 108-88-3 HCAPLUS  
CN Benzene, methyl- (9CI) (CA INDEX NAME)



RN 110-82-7 HCAPLUS  
CN Cyclohexane (8CI, 9CI) (CA INDEX NAME)



RN 110-83-8 HCAPLUS  
CN Cyclohexene (8CI, 9CI) (CA INDEX NAME)



RN 7664-41-7 HCAPLUS  
CN Ammonia (8CI, 9CI) (CA INDEX NAME)

NH<sub>3</sub>

L17 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1980:471287 HCAPLUS

DOCUMENT NUMBER: 93:71287

TITLE: 3-Methylphenol

INVENTOR(S): Burress, George T.; Kaeding, Warren W.; Wu, Margaret  
M.; Young, Lewis B.

PATENT ASSIGNEE(S): Mobil Oil Corp., USA

SOURCE: U.S., 14 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4197413	A	19800408	US 1978-969628	19781214
CA 1128549	A1	19820727	CA 1979-341880	19791213
JP 55083721	A2	19800624	JP 1979-161711	19791214
EP 12613	A1	19800625	EP 1979-302893	19791214
EP 12613	B1	19840808		

R: BE, DE, FR, GB, IT, NL

PRIORITY APPLN. INFO.:

US 1978-969627	A	19781214
US 1978-969628	A	19781214
US 1978-969629	A	19781214

AB Alkylation of toluene by H<sub>2</sub>C:CHMe in the presence of HZSM-12 zeolite gave an isomeric mixture of MeC<sub>6</sub>H<sub>4</sub>CHMe<sub>2</sub> which was selectively dealkylated by steaming at 600° for 1 h in the presence of ZSM-5 zeolite, a shape-selective catalyst, to give toluene and olefins from 4-MeC<sub>6</sub>H<sub>4</sub>CHMe<sub>2</sub> while the 2- and 3-MeC<sub>6</sub>H<sub>4</sub>CHMe<sub>2</sub> remained essentially unreacted. Oxidation of 2- and 3-MeC<sub>6</sub>H<sub>4</sub>CHMe<sub>2</sub> by O<sub>2</sub> in the presence of PhCMe<sub>2</sub>OOH followed by treatment with H<sub>2</sub>SO<sub>4</sub> gave 3-MeC<sub>6</sub>H<sub>4</sub>OH. 2-MeC<sub>6</sub>H<sub>4</sub>CHMe<sub>2</sub> did not participate in the oxidation or rearrangement reactions.

IC C07C037-08

INCL 568798000

CC 25-10 (Noncondensed Aromatic Compounds)

IT 98-82-8 100-41-4, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)  
(alkylation of, in the presence of HZSM zeolite)

IT 7664-41-7, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)  
(ammonolysis of dichlorobenzene by)

IT 4198-72-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation and catalytic rearrangement of)

IT 535-77-3P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation and oxidation of)

IT 527-84-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation and oxidation of, in the presence of HZSM zeolite)

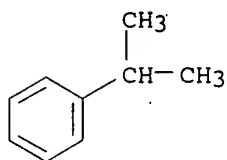
IT 100-18-5P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation and selective dealkylation of, in the presence of HZSM catalysts)

IT 99-87-6P 105-05-5P 611-14-3P 620-14-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation and selective dealkylation of, in the presence of HZSM zeolite)

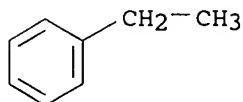
IT 80-15-9P 99-62-7P 108-39-4P, preparation 135-01-3P 141-93-5P 1595-16-0P 1772-10-7P  
RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)

IT 98-82-8 100-41-4, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent) (alkylation of, in the presence of HZSM zeolite)

RN 98-82-8 HCAPLUS  
CN Benzene, (1-methylethyl)- (9CI) (CA INDEX NAME)



RN 100-41-4 HCAPLUS  
CN Benzene, ethyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



IT 7664-41-7, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent) (ammonolysis of dichlorobenzene by)

RN 7664-41-7 HCAPLUS  
CN Ammonia (8CI, 9CI) (CA INDEX NAME)

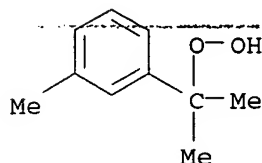
NH<sub>3</sub>

IT 4198-72-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
(Preparation); RACT (Reactant or reagent)  
(preparation and catalytic rearrangement of)

RN 4198-72-5 HCAPLUS

CN Hydroperoxide, 1-methyl-1-(3-methylphenyl)ethyl (9CI) (CA INDEX NAME)

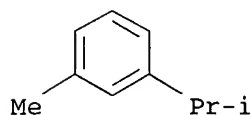


IT 535-77-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
(Preparation); RACT (Reactant or reagent)  
(preparation and oxidation of)

RN 535-77-3 HCAPLUS

CN Benzene, 1-methyl-3-(1-methylethyl)- (9CI) (CA INDEX NAME)

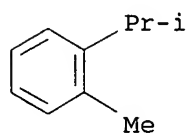


IT 527-84-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
(Preparation); RACT (Reactant or reagent)  
(preparation and oxidation of, in the presence of HZSM zeolite)

RN 527-84-4 HCAPLUS

CN Benzene, 1-methyl-2-(1-methylethyl)- (9CI) (CA INDEX NAME)

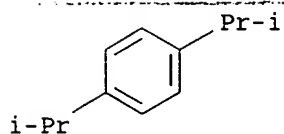


IT 100-18-5P

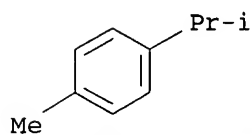
RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
(Preparation); RACT (Reactant or reagent)  
(preparation and selective dealkylation of, in the presence of HZSM  
catalysts)

RN 100-18-5 HCAPLUS

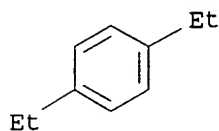
CN Benzene, 1,4-bis(1-methylethyl)- (9CI) (CA INDEX NAME)



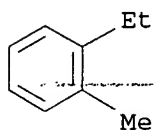
IT 99-87-6P 105-05-5P 611-14-3P 620-14-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
(Preparation); RACT (Reactant or reagent)  
(preparation and selective dealkylation of, in the presence of HZSM zeolite)  
RN 99-87-6 HCAPLUS  
CN Benzene, 1-methyl-4-(1-methylethyl)- (9CI) (CA INDEX NAME)



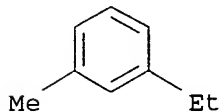
RN 105-05-5 HCAPLUS  
CN Benzene, 1,4-diethyl- (9CI) (CA INDEX NAME)



RN 611-14-3 HCAPLUS  
CN Benzene, 1-ethyl-2-methyl- (9CI) (CA INDEX NAME)



RN 620-14-4 HCAPLUS  
CN Benzene, 1-ethyl-3-methyl- (9CI) (CA INDEX NAME)



IT 80-15-9P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)  
RN 80-15-9 HCAPLUS

CN Hydroperoxide, 1-methyl-1-phenylethyl (9CI) (CA INDEX NAME)

